Studies in the Botany of the Southern United States.—XIII.

By John K. Small.

I. SPECIES HITHERTO IMPERFECTLY UNDERSTOOD.

Baptista laevicaulis (A. Gray).

Baptista leucophea var. *laevicaulis* A. Gray; Bot. Gaz. **4**: 132. 1879.

Perennial, nearly glabrous. Foliage turning blackish in drying: stems erect, 3–7 dm. tall, branching: leaves 3-foliolate; leaflets leathery, obovate or cuneate-obovate, 4–8 cm. long, mucronulate to retuse at the apex, delicately reticulated: racemes somewhat declined, 1–3 dm. long, 1-sided: pedicels 3–6 cm. long, subtended by ovate or oblong-lanceolate acute bracts: calyx pubescent within, 1 cm. long, prominently nerved; segments, except the upper one, lanceolate or ovate-lanceolate, about as long as the tube: corolla dull yellow; standard orbicular-ovate, 2 cm. in diameter, deeply cleft, rather abruptly narrowed into the short claw; wings and keel-petals with blades over 2 cm. long: pods firm, oval, 3–4 cm. long, with a slender curved beak and a stipe at least as long as the calyx.

On prairies, Louisiana and Texas.

A large species with the general habit of *Baptista lencophaea*, but with almost glabrous foliage. The only pubescence on the leaves and their stipules is a sparse villous ciliation. The stems and inflorescence are glabrous or practically so, save the dense lustrous pubescence lining the inside of the calyx-tube and covering the ovary.

The first specimens were collected by Dr. Hale in Louisiana, number 210. Mr. Langlois found the species in Calcasieu and St. Landry Counties, western Louisiana in the years 1884 and 1885. As the species has been described but imperfectly as a variety, I have given the above description.

Kraunhia macrostachys (T. & G.).

Wistaria frutescens var. *macrostachys* T. & G. Fl. N. A. **1**: 283. 1838.

Wistaria macrostachys Nutt.; T. & G. Fl. N. A. **1**: 283. As synonym. 1838.

A vine climbing over bushes or trees, 1–7 meters high. Stems more or less branched, becoming 2–3 cm. thick: leaves 2–3 dm. long or rarely shorter: leaflets usually 9, ovate or oval-ovate to elliptic or elliptic-lanceolate, 3–7 cm. long, acuminate, ciliate, rounded or cordate at the base: racemes 2–3 dm. long, loosely-flowered, drooping; rachis and pedicels densely hirsute and glandular: calyx pubescent like the pedicels; tube campanulate; segments lanceolate or narrowly-lanceolate, acuminate, the lateral ones about as long as the tube and the lowest one much longer: corolla lilac-purple or light blue; standard with a short claw and suborbicular blade, this rather broader than high, 1.5 cm. in diameter, acuminate at the base; wings 1.5 cm. long, the subulate-linear spur about as long as the claw: pods 5–10 cm. long, torulose, reddish-brown, rather obtuse: seeds oblong or cylindric-oblong, black, lustrous.

In swamps, Missouri to Tennessee and Arkansas. Spring.

Missouri. *Eggert.*

Tennessee: Covington, 1881, *Byars;* Forked Deer River, 1893, *Bain.*

Arkansas: Craighead county, 1893, *Eggert.*

Sufficient material has now been collected to prove this *Kraunhia* of the central Mississippi Valley a perfectly distinct species. This fact was observed by Mr. Nuttall many years ago. The elongated racemes with their rather shaggy hirsute and glandular pubescence readily separate the plant from the eastern *Kraunhia frutescens.* Strong characters are furnished by the flowers; the calyx-segments are as long as the tube, or the lower one longer, and the blade of the standard is decurrent on its claw. In *Kraunhia frutescens* we find contrasting characters for all these parts.

I have received valuable field notes from Mr. Henry Eggert, Dr. James Byars and Prof. S. M. Bain.

HIBISCUS INTEGRIFOLIUS (Chapm.).

Hibiscus coccineus var. *integrifolius* Chapm. Fl. S. States, Ed. 2, 610. 1884.

Hibiscus semilobatus Chapm. Fl. S. States, Ed. 3, 52. 1897.

As indicated in the preceding line, during the past year this neglected plant was given specific rank, but unfortunately under an untenable name. The comparatively blunt calyx-segments fur-

nish a character not yet noted as a means of distinguishing between the present species and *Hibiscus coccineus*.

PHACELIA BOYKINII (A. Gray).

Phacelia fimbriata var. *Boykinii* A. Gray, Proc. Am. Acad. 10: 320. 1875.

Annual, sparingly strigillose. Stems erect, more or less branched, 1–2 dm. tall, glabrate in age: leaves 1–3 cm. long; blades pinnatifid, rough, the lower ones petioled, the upper sessile; segments obtuse, abruptly pointed or mucronate: racemes many-flowered, 3–7 cm. long: pedicels erect, about as long as the calyx at maturity: calyx bristly; segments oblong, 3–3.5 mm. long, prominently nerved, obtuse: corolla bluish, 7–8 mm. broad; segments oblong-obovate, laciniate; appendages obsolete: filaments exserted, sparingly villous: capsules ovoid-globose, 2.5 mm. in diameter.

In dry soil, Columbus, Georgia.

There can be no doubt that this form is specifically distinct from *Phacelia fimbriata* and other related species. The firmer texture of the foliage, the rigid stems and branches, the abruptly pointed or mucronate leaf segments, the many-flowered narrow racemes with their short pedicels, the small corollas and small capsules are characters separating the plant from *P. fimbriata*. The original specimen was collected by Dr. Boykin in 1839.

II.—NEW SPECIES OF HERBACEOUS PLANTS.

THALICTRUM CAULOPHYLLOIDES.

Perennial by a horizontal rootstock, deep green, glabrous. Stems erect, 6–12 dm. tall: leaves 2–5 dm. long, spreading, with long petioles: leaflets firm; blades oval to suborbicular in outline, often broader than long, 4–9 cm. in diameter, glaucous and prominently nerved beneath, cordate or truncate, 3–5-lobed above the middle; lobes apiculate: petiolules slender, 5–30 mm. long: pedicels 8–20 mm. long, wire-like: fruit elliptic, 6 mm. long, sharply ribbed, contracted into stipes 1.5–2 mm. long, tipped by the persistent club-shaped style.

On mountain slopes, Tennessee. Spring and summer.

I have suspected the existence of another species of *Thalictrum* in the southern Alleghanies for several years. This winter Prof.

Ruth sent me mature specimens of the hitherto imperfectly understood form which I have just described. The leaflets of the species bear a strong resemblance to those of *Caulophyllum thalictroides*, whence the specific name. In this respect they differ from those of the nearest relative, *Thalictrum coriaceum*. The best character, however, exists in the fruit which is larger and narrower than that of *T. coriaceum*. The style is one-half as long as the achene or shorter and is club-shaped, thus differing from the longer style of its relative, which is subulate at maturity. The type specimen was collected by Prof. Ruth on mountain sides, Cade's Cove Mountain, Tennessee, July, 1892, number 1800.

CAPNOIDES HALEI.

Annual, glabrous, bright green. Stem branched at the base; branches spreading or ascending, 1–3 dm. long, simple or sparingly branched: leaves glaucescent beneath, the lower ones with petioles longer than the blades, the upper ones sessile, all dissected; segments rather coarse, acute: racemes erect, peduncled, 2–5 cm. long: bracts ovate to elliptic, acuminate: pedicels 2–5 mm. long, stout: corolla yellow, about 1.5 cm. long, the spur obtuse, much shorter than the body, the outer petals with thin incised-toothed crests: capsules stoutish, 2 cm. long, straight, erect or nearly so, on short, almost erect pedicels.

In dry soil, Florida to Louisiana. Spring.

Specimens of the species here described were collected many years ago in Louisiana by Dr. Hale, and lately Mr. Curtiss has distributed excellent material from the vicinity of Jacksonville, Florida, representing his number 4515, at least in part.

Capnoides Halei is most closely related to *Capnoides curvisiliquum* from which it may easily be distinguished at sight by its more slender habit, and especially by the more coarsely dissected leaf-blades; the corolla is of a much less brilliant yellow and the spur is much shorter than the body, whereas, in *Capnoides curvisiliquum* the spur and body of the corolla are equal in length. The capsules are erect or nearly so and straight as compared with the curved pods of its relative.

WALDSTEINIA PARVIFLORA.

Perennial by horizontal rootstocks, glabrous or villous-hirsute. Leaves basal, 1–3 dm. tall: petioles much longer than the blades

and usually less pubescent than the scapes: blades 3-foliolate; leaflets cuneate-obovate or broadly rhomboidal, 2–8 cm. long, coarsely and irregularly crenate or lobed: scapes erect, solitary or several together, commonly shorter than the leaves, more extensively corymbosely branched: calyx usually pubescent, often nodding; tube broadly turbinate, 2.5–3 mm. long; segments triangular-lanceolate or lanceolate-acuminate, often shorter than the tube: petals linear oblong or narrowly elliptic, shorter than the calyx-segments or slightly longer: achenes obovoid, 3 mm. long.

In woods or shaded soil, southwestern Virginia, North Carolina, Tennessee and Georgia. March to May.

Recent collections from the Southern States bring to light a third species of *Waldsteinia* for the North American flora. The new species may be distinguished from *W. fragarioides* by the more prominent disk, the small sessile petals which are about as long as the calyx-segments or shorter, and the larger obovoid achene. I have seen the following specimens:

Virginia: Marion, June, 1892, *Mrs. Britton* and *Miss Vail.*

North Carolina: Dunn's Mountain, April 20, 1896, *Small.*

Tennessee: Dandridge, March, 1842, *Rugel*; Knox county, May, 1897, *Ruth*, number 2140.

Georgia: Toccoa Falls, August 8, 1893, *Small*; Gainsville, April 20, 1897, *Huger.*

NEPTUNIA FLORIDANA.

Perennial, diffuse. Foliage sparingly pubescent or glabrate, bright-green: stems several from large roots, ascending or spreading, 3–7 dm. long, commonly branching, more or less scabro-pubescent: leaves rather numerous, with 3–5 pairs of pinnae: stipules lanceolate, acuminate: leaflets oblong or narrowly-oblong, 4–5.5 mm. long, often mucronulate, ciliate, prominently 3-nerved, sessile: peduncles slender, much longer than the subtending leaves: heads oval or oblong, 1–1.5 cm. long: pods oblong, 2.5–3.5 cm. long, apiculate, rather lustrous, glabrous: stipe 2–4 mm. long: seeds 5–10.

In sand, Florida to Louisiana.

Heretofore confused with *Neptunia lutea*, but very different. Easily distinguished by the glabrate or sparingly pubescent foliage, the long slender peduncles and the oblong glabrous rather many-seeded pods with short stipes. I note the following specimens:

Florida: *Chapman*, various collections; St. Marks, June, 1843. *Rugel;* between Everglades and Biscayne Bay, *Curtiss*, no. 726; Eustis, Lake County, May and June, 1894, *Nash*, no. 686.

Louisiana: *Hale.*

BAPTISIA HUGERI.

Perennial, minutely pubescent. Foliage but little changed in drying: stems erect, 3–6 dm. tall, branching: leaves 3-foliolate, variable; stipules lanceolate or linear-lanceolate, 1.5–2 cm. long, acute; leaflets elliptic, somewhat acuminate at both ends or those of the lower leaves oblanceolate, 5–6 cm. long, somewhat lustrous above, the minute pubescence often abundant at the nerves, these conspicuous: racemes about 1 dm. long, few-flowered: pedicels 4–6 mm. long, with bracts similar to the stipules: calyx campanulate, 6–7 mm. long; segments, except the upper one, lanceolate-acuminate, about as long as the tube: corolla bright yellow; standard with a suborbicular notched blade about 12 mm. in diameter; wings nearly 2 cm. long, their blades almost oblong; keel petals similar to the wings, but oblong-obovate: stamens deciduous: ovary stipitate.

On mountain slopes, Cornelia, Georgia. Spring.

A yellow-flowered species related to *Baptisia megacarpa*, but the leaflets are acute or acuminate at both ends and conspicuous on account of their pale nerves. The foliage is more pubescent and the flowers smaller. The lower calyx-segments are conspicuously acuminate and not obtuse or acutish as they are in *B. megacarpa.*

The type specimens were collected on the northern slope of Mount Griffin, near Cornelia, in northern Georgia, on May 1, 1897, by Mr. A. M. Huger, for whom the species is named.

BAPTISIA CUNEATA.

Perennial, glabrous. Foliage slightly discolored in drying: stems erect, 3–5 dm. tall, sparingly branched: leaves 3-foliolate: stipules lanceolate: leaflets leathery, cuneate, sometimes slightly cuneate-rhomboidal, 3–6 cm. long, often mucronulate, barely reticulated: racemes about 1 dm. long, slender, short-peduncled: pedicels slender, 1.5–2.5 cm. long: bracts lanceolate or ovate-lanceolate, acuminate, deciduous: calyx campanulate, nearly 1 cm. long; segments, except the upper one, ovate, acute: corolla pale cream-colored; standard broader than high, nearly 2 cm. broad,

notched, abruptly narrowed into the claw; wings and keel petals with blades 2 mm. long.

In sand, Nueces Bay, Texas.

Related to *Baptisia bracteata* but with glabrous foliage. The broad cuneate leaflets are not known in the related species. The pedicels are much longer and the calyx-segments abruptly pointed and not acuminate as they are in *B. bracteata*. The ovary, too, is glabrous or nearly so.

The type was collected by Mr. Heller along Nueces Bay, Texas, on April 3, 1894. Number 1523.

POLYGALA LEWTONII.

Birennial. Foliage glabrous, bright green. Stem much branched at the base; branches numerous, ascending or decumbent, 1–2 dm. long, simple, sharply-angled: leaves clustered, crowded, fleshy, spatulate or linear-spatulate, 1–2 cm. long, acute or acutish, wrinkled in drying: racemes 1–5 cm. long, loosely-flowered: pedicels slender, 1–2 mm. long: sepals various, dorsal broadly oblong, anterior narrowly-oblong, both 2 mm. long, obtuse; wings deep pink, inequilateral, half-rhombic, 4.5–5.5 mm. long: corolla deep pink: petals about 4 mm. long, the keel more finely lacerate than in *P. polygama*: style from the truncate top of ovary, ascending, cucullate above the middle, tufted appendage and stigmatic gland not approximate: capsule oblong-prismatic, 5 mm. long, glabrous: cleistogamous racemes slender, few-flowered; pedicels slender, 1–1.5 cm. long, curved.

In sand, peninsular Florida.

A unique species of a low habit, related to *Polygala polygama*. It may be distinguished by its small, fleshy, clustered leaves. All the parts of the flower are diagnostic, the oblong outer sepals and the half-rhombic inner sepals are very different from the corresponding organs in *P. polygama*. In *P. Lewtonii* we find a narrowly oblong pod about thrice as long as broad, while in its relative we have a broad pod whose length only slightly exceeds the breadth. Cleistogamous flowers do not seem to be produced as freely as in the case of *P. polygama*, and the pedicels varying from 1–1.5 cm. in length have nothing similar in the latter species.

TRIADENUM LONGIFOLIA.

Perennial. Foliage deep green, glabrous: stems erect, 3–6 dm. tall, simple below the inflorescence: leaves opposite; blades

oblanceolate, oblong or elliptic, thinnish, obtuse or notched at the apex, undulate, truncate or subcordate at the base, sessile: cymes terminal or axillary, few-flowered, sessile or short-peduncled; pedicels stout, 1–2 mm. long: sepals lanceolate or linear-lanceolate, 3–4 mm. long, acuminate: capsules oblong, about 1 cm. long, acute, glabrous, striate.

In low ground, Alabama and Florida. Summer.

A strongly marked species related to *Triadenum petiolata*, but with longer, thinner sessile or nearly sessile leaves, which are truncate or partially clasping at the base. The sepals are lanceolate and acuminate, as contrasted with the oblong, obtuse sepals of *T. petiolata*.

The originial label accompanying the type specimens reads as follows: "In fossis prope Summerville, Alabama, et ad fluv. Apalachicola, Florida, legit Rugel, Aug.–Oct., 1843."

PHACELIA BICKNELLII.

Annual, strigose. Stems branched at the base; branches erect or ascending, 1–3 dm. tall, commonly branching: leaves 1–4 cm. long; blades pinnatifid, the lower ones petioled, the upper sessile and somewhat clasping; segments acute: racemes many-flowered, 4–10 cm. long: pedicels about as long as the calyx at maturity: calyx bristly; segments linear, 5 mm. long, revolute: corolla pale blue, 4 mm. broad; segments oblique, irregularly toothed, pubescent without; appendages obsolete: filaments included, about as long as the tube, glabrous: capsules subglobose, 2 mm. in diameter: seeds sharply reticulated, reddish brown.

In barren soil, Tennessee. Spring.

Most closely related to *Phacelia Boykinii*. The habit of the plant especially the upper portion, is strongly suggestive of the inflorescence of *Heliotropium*, section TIARIDIUM. The calyx-segments are linear as contrasted with the oblong segments of *P. Boykinii*, while the corolla is only about one-half as large, and its segments are irregularly toothed instead of laciniate. The glabrous filaments also serve as a means of separation.

The original specimens were collected by Mr. E. P. Bicknell, near Nashville, Tennessee, in May, 1894.

PHACELIA LAXA.

Annual, sparingly hirsute. Stems branched at the base; branches spreading, 1–3 dm. long, simple or forked, slender:

leaves 2–6 cm. long; blades pinnately-lobed, the lower ones long-petioled, the upper short-petioled; lobes entire, ascending: racemes lax, few-flowered, 4–12 cm. long; pedicels spreading or recurved, much longer than the calyx at maturity: calyx sparingly bristly; segments obovate or suborbicular, 4–6 mm. long, obtuse, ciliate, variable in same calyx: corolla lilac or light blue, 1 cm. broad; segments rounded, entire, about as long as the tube; appendages present: stamens glabrous, shorter than the corolla: capsules suborbicular, hirsute near the top.

Differs from *Phacelia patuliflora* in the less dense pubescence and in the petioled few-lobed leaf-blades. Besides these differences in foliage, the short pedicels, the short obovate or suborbicular calyx-segments and the smaller corolla (1 cm.) all furnish ready means of separating *Phacelia laxa* from *P. patuliflora*.

The type specimens were collected by Mr. Heller along Nueces Bay, Texas, March 12, 1894, number 1446.

MARILAUNIDIUM TENUE.

Annual, hirsute. Stems erect, 1–1.5 dm. tall, simple below, dichotomous above, wiry: leaves opposite, blades linear or slightly broadened upward, 1.5–3 cm. long, sessile: pedicels slender, 1–3 mm. long: calyx bristly; segments linear-filiform, 4–5 mm. long, erect, acute: corolla purplish, 5–6 mm. long, much surpassing the calyx; tube funnelform, about 6 mm. long; segments suborbicular, 3–3.5 mm. broad.

In dry soil, Indian Territory and Texas. Spring.

A low and slender species somewhat resembling *Marilaunidium augustifolium* (*Nama dichotomum* Choisy, var. *augustifolium* A. Gray), but more densely pubescent and with wider spreading branches. The large corolla which is much longer than the calyx separates it from *M. augustifolium* and associates it with such plants as *M. demissum* and *M. hispidum*. The following are typical:

Texas: Corpus Christi, March 14–21, 1894, *Heller*, number 461.

Indian Territory: 1868, *Palmer*, number 194.

SCUTELLARIA OCMULGEE.

Perennial, softly pubescent. Stems erect, 4–8 dm. tall, more or less branched above, densely pubescent with short villous hairs: leaves opposite; blades ovate to suborbicular, 3–8 cm. long, obtuse or acutish, crenate, cordate, or the uppermost trun-

ate: petioles about ½ as long as the blades: racemes panicled, leafy-bracted, 5–10 cm. long: bracts similar to the leaves but smaller: pedicels stout, 1–3 mm. long: corolla bright blue, 2 cm. long; tube short, gradually dilated; lower lip suborbicular, 6–7 mm. broad, entire; upper lip with an entire middle lobe, not reflexed.

On river banks, middle Georgia. Summer.

Related to *Scutellaria cordifolia*, but the leaf-blades are broader, more rounded and more truly crenate. In the corolla we find a shorter gradually dilated tube, an entire lower lip and an entire and straight upper lip.

The type specimens were collected by the writer on the banks of the Ocmulgee River above Macon, Georgia, in July 1895.

SCUTELLARIA ARENICOLA.

Perennial, pubescent with short upcurved hairs. Stems erect or ascending, simple or branched near the base; branches 2–4 dm. long, more or less branched above: leaves firm; blades ovate to elliptic, 1.5–3 cm. long, obtuse or acute, sharply or crenate serrate, lower ones truncate at the base, upper cuneate: petioles shorter than the blades: racemes 2–10 cm. long: bracts with oblong-oblanceolate or oblanceolate blades: pedicels ascending, 2–7 mm. long: corolla blue, 2–2.5 cm. long; tube gradually dilated; lower lip suborbicular, 1 cm. broad, slightly lobed, notched; upper lip usually apiculate.

In sand, peninsular Florida. Summer.

Resembling *Scutellaria integrifolia major* Chapm. but much more leafy. The texture of the leaf-blades is much firmer and the nerves prominent, while the margin is toothed to the apex, and none of the leaves entire, as in the case of its nearest relative.

The corolla furnishes characters in the entire lower lip and the merely undulate upper lip; the lower lip of *S. integrifolia major* being erose, while the upper one is manifestly lobed. I have the following specimens:

Florida: Eustis, Lake county, July 16–31, 1894, *Nash*, number 1316. Forest City, Orange county, July, 1894, *Lewton*.

SCUTELLARIA ALTAMAHA.

Perennial, pilose-canescent throughout, dull green. Stems erect or assurgent, 2–4 dm. tall, obtusely 4-angled, simple, strict,

purplish: leaves numerous, opposite; blades ovate or elliptic, 1.5–5 cm. long, obtuse or acutish, serrate, densely punctate, sessile or nearly so, the upper surface somewhat marked with impressed nerves, the lower surface paler, marked with prominent lateral nerves: racemes rather crowded at the end of the stem: calyx campanulate, 2–5 mm. long, faintly ribbed, grandular punctate, with both lips of the same size: corolla pale blue, 1–1.3 cm. long, contracted and curved at the base, glandular-punctate and glandular-pilose, delicately nerved; lower lip suborbicular, notched at the side; upper lip much larger than the lower, nearly truncate at the apex, with an ovate segment at each side: stamens slightly surpassing the upper lip; anthers strongly bearded.

Collected by the writer along the Altamaha River swamp in Liberty county, Georgia, June 18–21, 1895.

Nearest *Scutellaria pilosa*, but more rigid in habit. The numerous firm sessile or very short-petioled leaf-blades with their comparatively finely serrate margins form a strong contrast with the sparse thin coarsely-crenate or crenate-serrate, long-petioled leaf-blades of its most closely related species. The corolla too is much smaller. In addition to these differences, the pubescence is much shorter and is more dense.

VERNONIA FLACCIDIFOLIA.

Perennial, sparingly pubescent or glabrate. Stems erect, 1–1.5 meters tall, slender branched above: leaves rather numerous; blades thin, elliptic below to linear-lanceolate above, 0.8–2 dm. long, acuminate, sharply serrate, sometimes doubly so, attenuate into short petioles: corymbs 1–2 dm. broad; branches slender: peduncles barely enlarged at the top: involucres hemispheric, 3–4 mm. high, light green: bracts ovate to oblong, obtuse, ciliate, sometimes colored at the tip, not at all spreading: pappus pale straw-color: achenes 3 mm. long, with sharp ribs upwardly barbed.

On wooded hillsides, Ringgold, Georgia.

A species of rather delicate habit related to *Vernonia ovalifolia* T. & G., but differing in its much less rigid habit, glabrate foliage and larger differently shaped leaves which are of a very thin texture. The smaller involucres with their obtuse bracts and the pale straw-colored pappus are diagnostic.

The original specimens were collected by the writer on mountain sides about Ringgold in northwestern Georgia, in August 1895.

VERNONIA PULCHELLA.

Perennial, hirsute. Stems solitary or clustered, 3–10 dm. tall, branched above: leaves firm; blades oblong-oblanceolate or oblong to nearly linear-lanceolate, 2–10 cm. long, acute, serrate, often sharply so, somewhat crisped, revolute, sessile but not at all cordate: corymbs 1–1.5 dm. broad: peduncles 1–3 cm. long, slightly enlarged upward or some heads nearly sessile: involucres campanulate, 6–7 high, often purplish: bracts lanceolate to linear-oblong, prolonged into linear-subulate spreading or recurved tips: pappus pale straw-colored: achenes 3 mm. long, with upwardly barbed ribs.

On sand hills, Georgia.

A handsome species related to *Vernonia scaberrima* Nutt. It is, however, more robust in habit and has larger serrate leaves which are destitute of the peculiar base characteristic of *Vernonia scaberrima*. The tips of the involucral bracts are more slender and less rigid than those of its relative.

The type specimens were collected by the writer on sand hills bordering the Altamaha River swamps in Liberty county, Georgia, in July 1895.

VERNONIA TENUIFOLIA.

Perennial, with thinly pubescent foliage. Stems erect, 0.5–1 m. tall, branching above: leaves numerous; blades linear or nearly so, 0.5–1.5 dm. long, acute, serrate, minutely punctate, sessile: corymbs 5–10 cm. broad, with rather few heads: peduncles slightly enlarged upward: involucres campanulate, 8–10 mm. high, purple: bracts ovate to oblong, erect, acute or mucronate: pappus straw-colored or tinged with purple: achenes about 4 mm. long, with smooth and glabrous ribs.

In dry soil, western Texas.

Although this form has been confused with *Vernonia marginata* it is abundantly distinct. Its leaves are manifestly serrate while the broader and shorter involucres with their merely acute or mucronate bracts are very different from the narrower involucres and the acuminate bracts which are characteristic of *Vernonia marginata*.

SILPHIUM RUMICIFOLIUM.

Perennial, glabrous or nearly so, bright-green. Stem erect, 4–8 dm. tall, simple below, corymbosely branched above, grooved, reddish purple, stout: leaves mainly basal; blades leathery,

oblong to oblong-obovate, 1–1.5 dm. long, rounded at the apex, repand-undulate, smooth, red-nerved above: petioles shorter than the blades, winged, dilated and sheathing at the base: stem-leaves few, much reduced, narrow, serrate: pedicels stout, 5–12 cm. long, with several deciduous bracts: involucres hemispheric, 2 cm. broad: bracts various, the outer orbicular-ovate, about 1 cm. long, the inner oblong, about 1.5 cm. long, rounded: corollas 6–7 mm. long: rays yellow, 1.5–2 cm. long, notched at apex: achenes oblong-obovoid, 9–10 mm. long, narrowly winged, notched at the apex.

In dry sterile soil, Tennessee. Summer and fall.

I noticed this form as a new species in one of the larger herbaria several years ago. Prof. Ruth now sends newly prepared specimens of the same from Knoxville, Tennessee, where he collected them in September 1897, number 4024.

The new species is related to *Silphium terebinthaceum*, but the obovate type of leaf-blade with the tapering base is not characteristic of that species. A prominent character exists in the involucre where the outer bracts are broader than long, while in the most closely related species the corresponding bracts are longer than broad.

COREOPSIS LEWTONII.

Perennial glabrous. Stems branched at the base; branches ascending or slightly decumbent and erect, 3–5 dm. tall, slender, simple, or sparingly branched above: leaves opposite, approximate below, distant above; blades linear or narrowly linear-cuneate, 1–3 cm. long, obtuse or acutish: petioles somewhat shorter than the blades, often filiform: peduncles filiform, 1–7 cm. long: involucres 7–8 mm. broad: bracts scarious-margined, outer ovate, 1–1.5 mm. long, obtuse, inner oblong or oblong-lanceolate, 5–6 mm. long, obtuse or acutish: rays yellow, broadly cuneate, about 1 cm. long, 3-lobed; lateral lobes gradually rounded; terminal lobes notched: corolla yellow, 2 mm. long, segments recurved: style 2 mm. long, glabrous: achenes oblong to suborbicular; body elliptic, 2 mm. long; wings broad, entire; awns short.

In low sandy soil, peninsular Florida. Summer.

A species related to *Coreopsis angustifolia* but much more delicate in habit. Readily distinguished by the manifestly petioled leaf-blades, the broader and more amply lobed rays and the entire short-awned achenes.

The original specimens were collected by Mr. F. L. Lewton at Forest City, Orange County, Florida 1894.

SENECIO EARLEI.

Perennial, bright green, densely cottony below, sparingly so and glabrate above. Stems usually tufted, erect or ascending, 2–5 cm. tall, simple or nearly so below, corymbosely branched above: leaves various, basal quite numerous; blades oval or oblong, 1.5–6 cm. long, serrate, obtuse or retuse, often crimson beneath: petioles longer than the blades; stem-leaves pinnatifid, linear-lanceolate or oblong, the lower ones with petioles, the upper sessile: pedicels slender: involucres hemispheric, 8–9 mm. broad, 8–10 mm. high: bracts of the involucres linear or nearly so, 5–5.5 mm. long, acute, hyaline-margined: rays oblong, 4–6 mm. long, bright yellow, corolla yellow, 4–4.5 mm. long; segments triangular or ovate: style glabrous: achenes 3 mm. long, scabro-pubescent on the angles.

In dry soil, Tennessee and Alabama. Spring and summer.

A showy species related to *Senecio tomentosus*. The main points of difference are: First, the almost wholly glabrous foliage, only the base of the plant permanently woolly. Second, the shorter petioles, and shorter, more rounded and more finely toothed leaf-blades. Third, the more open inflorescence and more numerous heads. Named for Prof. F. S. Earle, of Auburn, Alabama.

I have the following specimens:

Alabama: Auburn, Lee County, 1896, *Earle* and *Underwood*.

Tennessee: Knoxville, Knox County, 1897, *Ruth*, number 4211.

SENECIO MEMMINGERI Britton.

Perennial, glabrous or nearly so, bright green. Stems erect, solitary or tufted, 3–6 dm. tall, simple below, corymbosely branched above, accompanied by tufts of basal leaves: basal leaves 1–2 dm. long; blades bipinnatifid, longer than the petioles; segments oblong or obovate in outline, more or less cuneate at the base, coarsely toothed or incised, the teeth entire or with 1 or 2 small teeth: blades of the stem-leaves similar but usually more finely divided: corymbs 5–15 cm. broad: heads usually numerous: involucres campanulate, 6–7 mm. broad: bracts linear, the longer 5 mm. long, acute, scarious-margined: corollas 4–4.5 mm. long; segments triangular-ovate: rays yellow, linear-oblong, 5–6 mm. long, 3-toothed at the apex: achenes grooved, 1.5 mm. long, pubescent.

In dry soil or on cliffs in or near the mountains, North Carolina and Alabama. Spring and summer.

Most closely related to *Senecio Millefolium*, but clearly distinguished by the coarse leaf-segments. The original specimens of this species were collected in Henderson county, North Carolina, by Mr. E. R. Memminger, in 1887. In 1891, in company with Mr. A. A. Heller, I found the plant on Blowing Rock Mountain in northwestern North Carolina. Prof. Underwood and Prof. Earle have given me specimens almost identical with the North Carolina plants from Auburn, Lee county, Alabama, where they collected it on May 16, 1896.

HIERACIUM ARGYRAEUM.

Perennial, the lower parts shaggy with long hirsute hairs. Stems erect, 3–6 dm. tall, mostly simple below, corymbosely branched above, and there naked: leaves mainly near the lower part of the stem; blades oblong-oblanceolate to oblong, 2–8 cm. long, slightly apiculate, shaggy pubescent on both sides, sessile or short-petioled: corymbs mostly with 4–10 heads: peduncles slender, glandular-pilose: bracts of the involucres narrowly linear or narrowly linear-lanceolate, 8–10 mm. long, scarious-margined, acute: rays yellow: pappus silvery white: achenes spindle-shaped, 4.5 mm. long, sharply ribbed, granular.

In sandy soil, Florida. Spring.

Related to *Hieracium Gronovii*, but with a habit suggesting that of *H. Marianum*. In place of a narrow panicle we find a corymbose inflorescence. The heads are much larger than those of *H. Gronovii* as are also the involucral bracts. The achenes are much larger and surmounted by a silvery-white pappus which is longer than the tawny pappus of *H. Gronovii*.

The type specimens were collected by Mr. Geo. D. Hulst, at DeLand, Florida, in March 1891. Other Florida localities are: Tampa Bay [*Leavenworth?*]; St. Marks, May, 1843, *Rugel;* Mayport and Jacksonville, 1870–76, *Keeler.*

III.—NEW SPECIES OF WOODY PLANTS.

HYDRANGEA CINEREA.

A spreading shrub, 1–2 meters tall, with deep green foliage. Leaves opposite; blades thinnish, oval, elliptic, narrowly ovate or

orbicular-ovate, 6–15 cm. long, acuminate, serrate, obtuse, rounded or cordate at the base, bright green above, gray tomentose and not reticulated beneath; petioles somewhat more than ½ as long as the blades or shorter: corymb 5–15 cm. broad, rather round topped: sterile flowers commonly present: calyx campanulate; tube ribbed; segments triangular, acute: petals 5, ovate, boat-shaped, 1.5 mm. long, hooded at the apex: stamens conspicuously exserted: capsule urn-shaped, about 2 mm. in diameter, usually higher than broad, strongly ribbed, tipped by the 2–3 spreading styles.

Western slopes of the Allegheny Mountains, Tennessee and Georgia. Spring and summer.

This shrub stands between *Hydrangea arborescens* and *H. radiata* but is distinguished from either by the gray tomentum of the lower surface of the leaves.

The following specimens belong here:

Tennessee: Chilhowee Mountains, June, *Curtiss*, Number 833; White Cliff Springs, June 24, 1890, *Scribner*, July, 1894, *Kearney;* Chilhowee Gap, Blount County, June 24, 1893, *Kearney.*

Georgia: Ringgold, August 6–12, 1895, *Small.*

PRUNUS INJUCUNDA.

A shrub or tree of a somewhat straggling habit, seldom spiny, clothed with a dull dark-gray bark which on the younger branches is covered with a fine pubescence of a velvety texture. Stem 5–8 meters high, with a maximum diameter of 2 dm.; branchlets ascending or erect, the youngest flexuous: leaves 2–6 cm. long, 1–3 cm. broad, blades oval or obovate, acute or somewhat acuminate, finely but sharply serrate (the teeth apiculate), acute or acuminate at the base, conspicuously and densely pubescent beneath, inconspicuously pubescent and slightly rugose above; midrib very prominent, its lateral branches less so: petioles .5–1 cm. long, pubescent: drupe oblong, 10–13 mm. long, dark purple, clothed with a lighter bloom: stone ovoid, 8–10 mm. long, much compressed, pointed at both ends, crested and grooved on each side of the crest, also grooved on the opposite side.

In sandy soil on the granite districts about Stone Mountain, Georgia. First collected by the writer on July 7, 1893, at the base of Little Stone Mountain.

Heretofore confused with *Prunus umbellata;* it has, however, a

more rigid habit and the foliage, including the branchlets, is velvety-tomentose. In place of the subglobose drupe of *P. umbellata*, we find an oblong fruit of an extremely bitter taste. The stone is correspondingly lengthened.

IV.—A NEW GENUS OF PARONYCHIACEAE.

In that peculiarly formed and little explored region of southwestern Georgia and adjacent Florida, there grows a unique plant which has posed in an unstable manner in both the genera *Paronychia* and *Siphonychia*. It is clear that Dr. Chapman, in dealing with the plant, was more or less dissatisfied with the disposition he made of it, for in one edition of his flora we find it in *Paronychia*, while in another he has assigned it to *Siphonychia*. In fact the species possesses characters sufficient to establish it as a distinct genus. A prominent character is the peculiar involucel subtending the calyx.

FORCIPELLA.*

Annual or biennial pubescent herbs. Stems erect, simple below, forking above, the ultimate divisions ending in cymes. Leaves opposite, narrow, sessile. Cymes many-flowered, rather dense. Flowers perfect, inconspicuous, 2–3 in an involucre composed of two bracts and their broad 2-parted stipules, each, or only 2 seated in a hard, clamp-like involucel, whose two lobes are notched. Calyx of 5 linear-subulate distinct (sometimes cohering at the base) sepals. Petals none. Stamens inserted about the middle of the sepals. Ovary 1-celled, sessile. Style simple, very long and slender. Utricle included, ovoid.

FORCIPELLA RUGELII (Chapm.).

Siphonychia Rugelii Chapm. Fl. S. States 47. 1860.

Paronychia Rugelii Shuttl.; Chapm. Fl. S. States, 47. As synonym. 1860.

Annual or biennial, rather slender, finely pubescent. Stem erect, 1–5 dm. tall, forking, finally diffuse: leaves thickish, oblanceolate, or the upper linear-oblanceolate, 1–3 cm. long, acute, pubescent on both sides, ciliate, sessile: bracts of the involucres linear-subulate, their stipules ovate, acutish or short-acuminate, denticulate: calyx 3 mm.

* Diminutive of *forceps*, referring to the clamp-like involucels.

long, pubescent below the middle, erect in the whitish clamp-like involucel; sepals linear-subulate, acutish, erect, slightly involute: stamens included: style about equalling the sepals in length: utricle ovoid, tipped by the slender style: seeds lenticular, about 1 mm. broad.

In sandy soil and on sand hills, southwestern Georgia and adjacent Florida. Summer and fall. The species has been collected as follows:

Florida: Barren sandhills, October, *Chapman.*

Georgia: Bainbridge, *Chapman;* October, 1869, *Curtiss,* number 345.